



**U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 2**

Emergency and Remedial Response Division

290 Broadway, 19th Floor

New York, New York 10007-1866

***By Email***

**September 30, 2015**

Ms. Suzy Walls  
ARCADIS U.S., Inc.  
114 Lovell Road, Suite 202  
Knoxville, TN, 37934

**RE: Comments on Addendum 1 to the Data Gaps Sampling and Analysis Plan and the Addendum 1 to the Quality Assurance Project Plan for the Data Gaps Sampling and Analysis Plan, dated August 2015, Summary of VOC Results in Soil and Sediment Samples, dated August 26, 2015 Rolling Knolls Landfill Superfund Site, Chatham, New Jersey**

Dear Ms. Walls:

The U.S. Environmental Protection Agency (EPA) has completed its review and is providing comments on Addendum 1 to the Data Gaps Sampling and Analysis Plan (SAP) dated August 2015, Addendum 1 to the Quality Assurance Project Plan (QAPP) for the Data Gaps Sampling and Analysis Plan, dated August 2015 and Summary of VOC Results in Soil and Sediment Samples, dated August 26, 2015 prepared by ARCADIS U.S., Inc. on behalf of Chevron Environmental Management Company, Lucent Technologies Inc., (now known as Alcatel-Lucent USA Inc.) and Novartis Pharmaceuticals Corporation (the Group) for the Rolling Knolls Landfill Superfund Site, located in Chatham, New Jersey. This document has also been reviewed by the New Jersey Department of Environmental Protection (NJDEP). All comments have been collated as appropriate and attached.

Despite EPA's conversation with John Persico on August 24 and comment letter dated August 17, 2015, revisions fail to incorporate our comments. EPA's August letter also stipulated "If you believe that any changes are other than those directed by EPA's enclosed comments, those changes must be discussed with, and approved by, EPA's Project Coordinator prior to re-submittal of the document." Again, this did not happen. Thus, we believe that the best course of action is for us to modify the document. EPA has made the necessary corrections and edits to the SAP in redline/strikeout format. Additional comments on the SAP, QAPP, and the Summary of VOC Results in Soil and Sediment Samples are attached.

EPA disapproves the revised Addendum 1 to the Data Gaps SAP and QAPP as submitted, and requires the Group to amend the document in accordance with the attached comments. A revised Addendum 1 to the Data Gaps SAP and QAPP must be submitted within ten (10) days of your receipt of this letter. All of the enclosed comments must be addressed. If all comments are not adequately addressed, EPA may exercise its right to modify the document and provide the revised document to you for implementation or to direct you to make specified modifications to the document.

If you believe that any changes are necessary other than those directed by EPA's enclosed comments, those changes must be discussed with, and approved by, EPA's Project Coordinator prior to re-submittal of the document. Those discussions may be memorialized in a progress report or other communication to EPA's Project Coordinator. In addition, all changes made to the document, other than those made specifically at the direction of EPA, must be specified in writing to EPA upon re-submittal of the document.

Sincerely yours,

**Besty Donovan**

Special Projects Branch  
Remedial Project Manager

cc: J. McKenzie, NJDEP

**EPA's Comments on ARCADIS Addendum 1 to the  
Data Gaps Sampling and Analysis Plan and the Addendum 1 to the Quality Assurance Project  
Plan for the Data Gaps Sampling and Analysis Plan, dated August 2015, and the Summary of  
VOC Results in Soil and Sediment Samples, dated August 26, 2015  
Rolling Knolls Landfill Superfund Site, Chatham, New Jersey**

ARCADIS August 26, 2015 responses did not include responses to EPA's comments provided on August 17, 2015. Below are EPA's comments to ARCADIS submittal on August 26, 2015.

**ARCADIS Response to EPA Comments, August 26, 2015**

**1. Specific Comment 3:** EPA agrees that delineation should continue until NJDEP residential and non-residential SRS have been achieved, and not to levels consistent with the Ecological Screening Criteria or Impact to Ground Water numbers. However, areas where contamination is identified below residential and non-residential SRS but above Ecological Screening Criteria or Impact to Ground Water numbers should be noted in the RI report.

**2. Specific Comment 5 and 6:** ARCADIS has proposed to modify the number of intervals per boring at which analytical analysis is run for the perimeter sample locations. The August 26 ARCADIS response to comments letter states that deeper samples at the landfill perimeter and within the landfill will be collected on a contingent basis; if the shallower co-located sample has no exceedances the deeper sample will not be analyzed. It does not appear that this was discussed previously. All samples shall be analyzed and no samples shall be held as contingent.

**3. Comment 6. a. Perimeter Locations:** ARCADIS propose to "collect the samples at each perimeter boring location, as required, from the 0-1 foot core interval, but hold the 1 – 2 foot core interval for contingency analysis pending results of the shallower soil sample."

The historic data indicates a level of unpredictability in the distribution of contaminants at the site. In consideration of this unpredictability, more than just the surficial interval should be evaluated at the perimeter sampling locations during this phase of the investigation. This is especially so since only surficial samples have been collected in the low lying areas off of the landfill to date. Data do not exist which would enable an extrapolation of sample quality at 1-2 feet below grade to be made based on data quality in samples collected immediately above that zone. In consideration of this, the required samples should be collected and analyzed from both the 0 – 1 foot interval and the 1 – 2 foot interval at each boring location. All samples shall be analyzed and no samples shall be held as contingent.

**4. Comment 6. b. Interior Landfill Samples, Paragraph 3:** ARCADIS propose to collect the samples as required from a 1 foot core immediately below the bottom of the waste material, but hold the deeper 1 foot core (immediately above the clay layer) pending the results of the shallower soil sample.

There is an indication of increasing contaminant concentrations with depth within the landfill boundaries. The disturbed nature of the filled area over time makes it difficult to assume a consistent

vertical contaminant gradient within the boundaries of the landfill. In consideration of this, the required analyses should be run on both the shallower and the deeper 1 foot cored intervals collected from interior landfill boring locations. Thus, all samples shall be analyzed and no samples shall be held as contingent.

**5. ARCADIS Comment 8:** ARCADIS has proposed SD-49 which is located closer toward the landfill from previously sampled SS-164. EPA-requested sample SD-47 which is further out from SS-164. If SD-49 is below standards, then ARCADIS would conclude that contamination further out (i.e. SS-164) is not from the landfill. Contingent samples SD-50 and SS-174, further in from SS-49, are proposed as contingency to further evaluate the spatial trend if necessary, and would only be analyzed if SS-49 has exceedances. EPA disagree with the advance conclusion that if there is a clean sample between SS-164 and the landfill, that this would define the limit of contamination from the landfill. It would tend to rule out that particular flow path, but there could be other flow paths that may have bypassed SS-49. Review of Table 3 and Figure 3b of the SAP, ARCADIS is also proposing similar logic along the sample transect SS-173, SD-48, SS-162, SD-46. Again, EPA disagree with this logic. All samples shall be analyzed and no samples shall be held as contingent.

**6. ARCADIS General RI Comment 3b:** The response indicates that concentrations in downgradient wells will be compared to concentrations in upgradient wells to determine if the landfill is contributing to groundwater contamination for compounds that are naturally occurring. Will this comparison be statistical? Please provide further details on how the comparison will be conducted.

#### **Addendum 1 to the Data Gaps Sampling and Analysis Plan, Prepared by ARCADIS (August 2015)**

**1. Section 2.1.2 Soil Sample Locations:** Within the landfill ARCADIS will be drilling to the clay on site; a dual tube or discrete sampler should be used if ARCADIS goes much deeper than the water table to make representative samples at depth are collected.

**2. Section 2.2.2 Sediment Sampling Procedures, Paragraph 2:** This section describes how the various sediment samples will be collected from each 1 foot core interval at each boring. The way it is presented in the submittal indicates that the top six inches of each core will be analyzed for non-VOC contaminants and the bottom six inches of each core will be analyzed for VOC contaminants. This will result in alternate depths being analyzed for the non-VOC and the VOC parameters. While this is unavoidable for the 0 - 1 foot cores (due to VOC sample collection protocol) it will play out again in all deeper core samples.

It is requested that ARCADIS clarify if this is consistent with how the historic soil and sediment samples were collected and reported. If so, it would appear that all current surficial non-VOC data are actually from the 0 - 6 inch interval rather than the 0 - 1 foot interval that was reported. This needs to be considered when reporting historic and updated data in future reports.

**3. Section 2.2.2 Sediment Sampling Procedures, Paragraph 2:** In regard to the proposed intervals to be sampled in each of the borings discussed in this section, there is no mention of sample collection

from the 1 – 2 foot interval below grade. This is not consistent with ARCADIS’s August 26, 2015 Response to EPA comments where it was indicated that all perimeter sample locations would have samples collected from both the 0 - 1 foot depth interval below grade and the 1 – 2 foot depth interval below grade. Please revise this section to include the 1-2 foot interval as agreed in the Response to Comments.

This section indicated that the 0 to 0.5 foot interval will be homogenized and transferred into sample containers for TCL/TAL analysis without the VOC fraction. It seems that the 0.5 to 1 foot interval where the VOC sample will be collected from should also be included as part of the soil to be homogenized to capture the 0 to 1 foot interval characterization. Please clarify.

**4. Addendum 1 to the Data Gaps Sampling and Analysis Plan:** Attached is a redline/strikeout copy of the SAP which contains additional edits that should be incorporated as received after review. If there are any discrepancies please contact EPA immediately for resolution.

## Table 1

**1. Table 1, Sampling Locations, Depths, and Analyses:** Please provide a revised Table 1 to be consistent with the comments made in regard to number of proposed sample locations, sampled interval(s) at each boring location, analytical requirements, etc. In addition, if PCBs are detected in samples SD-52, SD-57, Sd-62 and SD-69 then PCB congener analysis should be included at location SD-69 for delineation of SS-46, location SD-52 for delineation of SS-39, location SD-57 for delineation of SS-104, and location SD-62 for delineation of locations near the south of the site (i.e. SS-113, SS-101, and SS-105).

The Notes and Footers should be modified, as appropriate.

## Figures

**1. SAP Figures 3a and 3b and QAPP Figures 2a and 2b:** Two locations are designated SS-182 on the site plans; one of these should be SS-183 (DEP-34 and DEP-35). Sample SS-182 on Figure 3b should be labeled SS-183. Please review figures and make the appropriate corrections.

**2. SAP Figures 4:** The Project Organizational Chart was not a part of the Addendum 1 Data Gaps Sampling and Analysis Plan. This addition was not discussed with EPA or approved for incorporation into the revised document. Please delete figure.

## Addendum 1 to the Quality assurance Project Plan for the Data Gaps Sampling and Analysis Plan, Prepared by ARCADIS (August 2015)

**1. QAPP Worksheet #14/16 Project Tasks and Schedule:** This does not address the pore water sample that was aborted at the MW-13 location. The schedule appears to be comprehensive with this exception. Please clarify the Group’s plan to collect an aqueous sample at this location.

**2. QAPP Worksheet #17 - Description of the sampling area (second bullet item):** ARCADIS has designated several of the perimeter samples as sediment samples even though they are located in zones that are not portrayed on the figures as being inundated. EPA request that the type of boring advancement and sample collection technique employed (soil vs sediment) for the perimeter samples be determined at the time of sample collection. This is consistent with Section 2.1.1 of the updated Addendum 1 to the Data Gaps SAP (5th paragraph). Please update the narrative in all documents and the relevant tables and worksheets to reflect this.

If there is a specific reason for treating these sample locations different from others in the same areas, please provide the reasoning.

**3. QAPP Worksheet #17 – Sample locations – Soil Samples a:** It is not apparent that the narrative in this section in regard to the number of samples to be collected matches what is included on Worksheet #18. Please update the narrative in all documents and the relevant tables and worksheets to accurately reflect the Data Gap sampling proposals, including any changes that are necessary to accommodate EPA comments on this submittal.

**4. QAPP Worksheet #17 – Sample locations – Sediment samples b:** It is not apparent that the narrative in this section in regard to the number of samples to be collected matches what is included on Worksheet #18. Please update the narrative and the relevant tables and worksheets to accurately reflect the proposals, including any changes that are necessary to accommodate EPA comments on this submittal.

**5. QAPP Worksheet #18 - Matrix:** It is noted that ARCADIS has designated several of the perimeter samples on this worksheet as sediment samples even though they are located in areas that are not portrayed on the figures as being inundated. EPA request that the type of boring advancement and sample collection technique employed (soil vs sediment) for the perimeter samples be determined at the time of sample collection. This is consistent with Section 2.1.1 of the updated Addendum 1 to the Data Gaps SAP (5th paragraph). Please update Worksheet #18 to reflect this.

If there is a specific reason for treating these sample locations different from others in the same areas, please provide the reasoning.

**6. QAPP Worksheet #18:** For interior landfill Samples SS-177 through SS-183, it noted that the depth for these samples is TBD. While this is acceptable, it is requested that perhaps a footnote be added to briefly explain how the depths will be determined (i.e. the first foot beneath the waste material at each boring location and a second one foot sample collected directly above the underlying clay layer).

**7. QAPP Worksheet #18:** The depth proposed for samples SD-45 through SD-69 is not consistent with either EPA's August 17, 2015 correspondence, or with the ARCADIS's August 26, 2015, responses to EPA. Worksheet #18 does not include the samples required to be collected at the 1- 2 foot interval below grade which were discussed in the referenced correspondences. Please update the worksheet to reflect the correct boring depth and sampled intervals.

It is also requested that the "type" of sample collection technique listed in the worksheet for SD-45 through SD-69 (Grab Sample) be clarified. The collection techniques mentioned in the August 2015 Addendum 1 to the Data Gaps SAP for these samples include the use of either a dedicated Lexan coring device or stainless steel Macrocore sampler. It is suggested that the "Type" column for these sample

locations in the worksheet be updated to be consistent with the sampling technique proposal included in the Data Gaps SAP which references specific coring devices.

Since all samples are to be analyzed, please remove all references to contingent samples.

**8. QAPP Worksheet 20 Field QC Summary:** No QA/QC is proposed for PCB congeners, except a field blank. Although only two samples, both from one location are proposed, it has been several months since this parameter has been analyzed. Full QA/QC is recommended. Please add a field duplicate, matrix spike and matrix spike duplicate.

### **Summary of VOC Results in Soil and Sediment Samples, Prepared by ARCADIS August 26, 2015**

**1. General Comment 1:** ARCADIS has proposed “Restrict the VOC analysis to the soil samples to be collected within the interior of the landfill (SS-177 through SS-183); and to landfill perimeter samples (SD-61 and SD-62)”. EPA is in agreement that VOCs should be analyzed in data gap samples collected near POI-3 and SS-109, which have historically showed VOC concentrations in excess of screening levels. EPA recommends that VOCs be analyzed in data gap samples collected near MW-10 and SS-103, which had concentrations of VOCs in excess of screening levels. Sample location SS-103 is very near MW-1, which had detections of benzene. Thus, SS-168 should also be analyzed for VOCs.

ARCADIS has designated perimeter samples SD-61 and SD-62 as sediment samples even though they are located in an area that is not portrayed on the figures as being inundated. We request that the type of boring advancement and sample collection technique (soil vs sediment) for these locations be determined at the time of sample collection.